

THE INFRASPECIFIC TAXONOMY OF PINUS CULMINICOLA  
ANDR. ET BEAM. (PINACEAE).

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The pinyon pines of Mexico are highly variable in morphological characteristics, they also occupy a considerable range of different habitats and different ecological areas. The amount of taxonomic recognition that should be given to these factors has received considerable controversy in the literature in recent years.

Martinez (1948). originally recognized P. cembroides Zucc. ex Bay. as having 3 needles in a bundle, with stomata or white lines on all leaf surfaces, or only on the 2 inner surfaces. Other botanists soon decided to make taxonomic distinctions between populations of P. cembroides having 2 lines of stomata and that of those having lines of stomata on all surfaces. Then in 1961 Andresen and Beamen named a new species of Pinus from Neuvo Leon which was closely related to P. cembroides, but it had needles in clusters of five and stomata only on the inner surface of the needles. Bailey and Hawksworth (1979) also decided to name a new species of pinyon pine from the S.W. United States and N. Mexico, only this pine had needles in three's, yet it also had stomata only on the two inner surfaces. Interestingly, Robert (1978) described yet another species of pinyon pine with stomata on 2 surfaces and needles in clusters of 3's.

It seems however that Bailey and Hawksworth (1979) and Robert (1978) were overlooking the fact that the new taxa they described shared many common traits with a taxon named P. culminicola which had been described considerably earlier. The description of P. culminicola by Andr. et Beam. is markedly similar to that given for P. discolor and P. johannis by Bailey and Hawksworth (1983). All three taxa are described as having needles that are dark green dorsally and glaucous ventrally; needles average 3-6 cm. long; fascicle sheaths become curled into persistent rosettes; female cones are 2.5-4 cm. long with small umbos and being chesnut-brown in color. Herbarium specimens of P. culminicola from the type locality have needles consistently in fives, but 3's and 4's do sometimes occur, hence I included P. discolor and P. johannis as synonyms of P. culminicola in my conifer checklist (Silba, 1984). However, while P. discolor and P. johannis vary in needle clusters from 3's to 5's, they are usually in 3's and there are a number of other characteristics that would make it seem necessary to recognize them at the varietal level.

Pinus culminicola and P. johannis have very dense, closely interposed foliage giving these shrub-like plants a very dense appearance. Pinus johannis is strongly three leaved with bark that is loose and of a flaky nature. Pinus discolor is very open branched and distinctly of tree proportions, also many trees tend to be dioecious in this taxon (F.T. Callahan, II, pers. comm., 7-2-84).

As currently understood typical P. culminicola occurs on the Cerro Potosi in Neuvo Leon, P. culminicolor var. discolor occurs in the S.W. United States and N. Mexico and P. culminicolor var. johannis is described from Concepcion del Oro, Zacatecas and the Sierra Madre Oriental in Coahuila.

I would like to stress the necessary usage of the term "varietas" for infraspecific taxa of the Coniferae, not only is the term older than modern designations but it also has appeared more often in the literature on an international scale. To incorporate the term "subspecies" and abolish the term "varietas" would require a considerable number of new names and combinations which would not be necessary. The terms "subspecies" and "formas" lead to too much excessive "splitting". It is my opinion that only one term be needed for infraspecific variation in the wild, as opposed to infraspecific variation in cultivation or civilization which requires another recent term, namely the term "cultivar" which is an appropriate name. The basis for distinctions between a "subspecies", "varietas" and "formas" are ill-defined. For instance, there are many species of Pinus that are closely related (i.e., P. cembroides and P. culminicola and yet there are some species of Pinus that are markedly different from one another, such as P. krempfii and P. cembroides. However, all these taxa of Pinus are classified at the "species" rank or level, but these are justly termed into different "subgenera" or "sections". So, then if the differences between some infraspecific taxa are greater than those of other infraspecific taxa in the wild why should other terms be introduced without taking a fair or equal argument for the differences between taxa at the "species" level.

PINUS CULMINICOLA Andr. et Beam., J. Arn. Arb. 42: 438, f.2-4 (1961).  
"Potosi Pinyon Pine"  
var. CULMINICOLA (typical variety).

P. CULMINICOLA var. DISCOLOR (Bail. et Hawksw.) Silba, comb. nova.  
"Border Pinyon Pine"

Synonymy: P. discolor Bail. et Hawksw., Phytologia 44(3): 130 (1979)= P. cembroides var. bicolor Little, Phytologia 17: 336

(1968).

*P. CULMINICOLA* var. *JOHANNIS* (M.F. Rob.) Silba, comb. nova.  
"Johann's Pinyon Pine"

Synonymy: *P. johannis* M.F. Rob., *Adansonia* ser. 2, 18, fasc. 3:  
366-367, f.2-4 (1978).

#### Literature Cited

Andresen, J.W. & Beaman, J.H. (1961). *J. Arn. Arb.* 42: 437-441.

Bailey, D.K. & Hawksworth, F.G. (1979). *Phytologia* 44(3) : 130.

\_\_\_\_\_. (1983). *Phytologia* 53(3): 226-234.

Martinez, M. (1948) . *Los Pinos Mexic.*, ed.2, illus. Mexico City.

Robert, M.F. (1978). *Adansonia*, ser. 2, 18, fasc. 3: 366-367.

Silba, J. (1984). *Phytol. Mem.* 7. Plainfield, New Jersey.